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22 April 1966

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INTELLIGENCE MEMORANDUM

AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM
(THROUGH 14 APRIL)

DIRECTORATE OF INTELLIGENCE

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
22 April 1966

INTELLIGENCE MEMORANDUM

An Appraisal of the Bombing of North Vietnam*
(Through 14 April)

Summary

US air strikes in North Vietnam (NVN) during the period 14 March - 14 April 1966--primarily armed reconnaissance against lines of communication (LOC), infiltration routes, dispersed logistic areas and land and waterway traffic--were concentrated in the region below the 20th parallel. Strikes against fixed targets (other than LOC targets) were few; consequently there was little effect on national capacities. Probably the most significant change in the air strike program was the first B-52 heavy bomber strike on the NVN approaches to Mu Gia Pass, the principal truck supply route into southern Laos and South Vietnam. (SVN).

Although the flow of men and materiel from NVN into Laos and SVN continues, the air interdiction effort is having some adverse effects on NVN operations and is causing NVN to expend a considerable amount of time, manpower, and materiel to continue the support of Communist forces in Laos and SVN. The North Vietnamese, in attempting to circumvent the effects of the air strikes, have placed major emphasis on construction and maintenance of LOC. As a result, LOC capabilities still greatly exceed observed traffic densities. Moreover, NVN's increased efforts have maintained the armed forces' in-country capabilities and their capability to support VC/NVA and PL/NVA forces in SVN and Laos. We estimate, however, that the reductions in LOC capacities attained, coupled with internal manpower requirements, have served to place a ceiling on the NVN's capability to mount and sustain an overt attack into SVN and Laos. Nevertheless, we see no change in Hanoi's position for settling the war, nor is there an apparent weakening of popular morale.

*This memorandum is CIA's issuance of a joint CIA-DIA study prepared monthly.

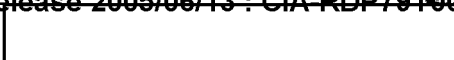
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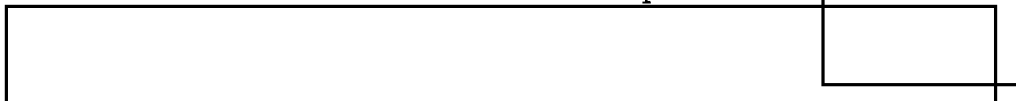
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The estimated damage, in dollar terms, continues to accumulate slowly, resulting in direct and indirect economic and military costs totaling about \$69 million.* The economic impact of the bombing has been limited by restriction of the bombing to targets of relatively minor economic significance, the predominance of a self-sufficient subsistence sector, and the receipt of aid from Communist countries. Nevertheless, a decline in living standards and local shortages have been noted. Reallocations within the labor force and the dispersion of facilities, undertaken in response to the bombing, have been costly and these costs have been increased because of inept management. The domestic supply of skilled labor has been exhausted and frequent localized shortages of unskilled labor have been noted.

Effects on Military Targets

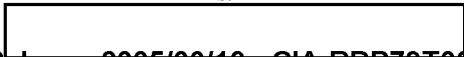
1. US air strikes in NVN during the period 14 March - 14 April 1966 were primarily armed reconnaissance against lines of communication, infiltration routes, dispersed logistic areas and land and waterway traffic. Strikes against fixed targets (other than LOC targets) were few; consequently there was little effect on national capacities.



2. The interdiction effort was concentrated in the region below the 20th parallel during this period. Major efforts were directed against the four principal routes: 1A, 7, 8, and 15. Heaviest emphasis was placed on road cratering and the bombing of fixed and pontoon bridges and their approaches. The destruction of vehicles was also given a high priority. Cumulative totals of damaged and destroyed targets are shown in Tab A.

3. On 11 April, 29 B-52s conducted the first heavy bomber attack against North Vietnam on the northern side of Mu Gia Pass about 60 nautical miles south of Vinh. The objective of the attack was to

*US dollars are used throughout this memorandum.

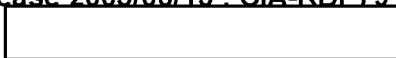


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disrupt and impede vehicular movement on the NVN approach route to the pass, which is the principal truck supply route into southern Laos and South Vietnam. Poor weather conditions and heavy foliage in the target area have prevented an assessment of the strike, but preliminary reports indicate that a high percentage of the bombs were in the target area and five new cuts were noted in the road.

4. While the flow of men and materiel from NVN into Laos and SVN continues, the effort below the 20th parallel has had some adverse effects. In the areas where armed reconnaissance has been concentrated movement is restricted almost entirely to the hours of darkness and supply facilities have been dispersed; they now operate from small isolated areas, easily camouflaged or hidden. These strikes maintained at high levels the amount of time, manpower, and materiel that NVN must expend in order to continue support of Communist forces in SVN and Laos. In addition, problems of management, command, and control have been compounded.

5. The North Vietnamese, in attempting to circumvent the effects of the air strikes, have placed major emphasis on construction and maintenance of LOC. No apparent effort is being made to repair military installations such as barracks, supply depots, and ammunition depots. As a result of their efforts, the capacities of the LOC still greatly exceed observed traffic densities. Moreover, their increased efforts have helped to maintain the NVN armed forces' capability to perform the missions of national defense, internal security, and to train and support with men and materiel VC/NVA and PL/NVA forces in South Vietnam and Laos. On the other hand, we estimate that the reduction in LOC capacities which has been achieved by US air strikes coupled with Hanoi's internal manpower requirements have served to place a ceiling on NVN capabilities to mount and sustain an overt attack into South Vietnam and Laos.

6. Inclement weather during the last week of March and in early April has limited air strike effectiveness and a definitive assessment of repair activity on transportation facilities. However,



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photographic analysis has confirmed rather extensive road construction efforts in southern North Vietnam. Construction was noted between Routes 15 and 101, and in two separate areas south of Ha Tinh. A fourth road construction site was reported in the vicinity of Hoa Binh near Routes 15 and 6 southwest of Hanoi. The capacity for moving supplies south by road probably has not decreased appreciably since the resumption of bombing. The existence of numerous bypass facilities including new bridges, fords, ferries, and alternate roads, many of which were constructed or reconstructed during the bombing lull, has limited the impact of air strikes although the number of unusable bridges has increased since February. In addition, fords and ferries are now being replaced by pontoon bridge sections which are camouflaged and dispersed along the river banks during the day.

7. In areas where concentrated armed reconnaissance flights have been conducted, the figures on motor vehicles sighted by pilots (approximately 397 vehicles) [REDACTED]

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[REDACTED] sighted appeared on the LOC network during the third week of March. Pilots have reported that at least 109 vehicles were damaged and 96 destroyed, or approximately 50 percent of the total number sighted. This reflects a significant increase in the ratio of damage/destruction to vehicles sighted over the level of previous months.

8. The Hanoi - Lao Cai railroad line, bombed in March and April, probably has been or will be reopened shortly for through service. The two bridges on this line which were reported destroyed have been rebuilt, and additional bridges and track which were reported destroyed or damaged also probably have been repaired. The results of strikes against the Hanoi - Dong Dang railroad line in early April have not been determined but damage to this line would be repaired promptly. The Hanoi-Vinh railroad line probably is operational for through service at least as far south as Thanh Hoa. Information is inadequate to assess the effects of recent air strikes between Thanh Hoa and Vinh, but extensive provisions have been

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made to bypass existing and prospective interdic-
tions.

9. The number of waterway craft struck during March 1966 was more than double that struck during the previous month; about one third of the craft struck were reported destroyed. No JCS targeted waterway facilities were struck; however, shipbuilding and ship repair facilities at Ninh Binh and the naval base at Phuc Loi were attacked. Heavy damage and numerous secondary explosions were reported at Phuc Loi. Aerial operations against the waterways were generally confined to routes near the coast and in the coastal areas south of Vinh. Coastal traffic continues to move, and some unloading is being done over unimproved riverbanks.

Political and Public Relations

10. The continuation of the air strikes against North Vietnam does not appear to have weakened popular morale to an extent which would influence the regime's determination to continue supporting the insurgency in South Vietnam.

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in general morale appears to be holding up rather well.

11. The regime's propaganda efforts to discount the effects of the air strikes appear to have intensified in recent weeks. This may suggest that there is a growing concern on the part of the leadership that the bombings are having an increasingly adverse effect on the ability of those areas under attack to carry out their normal functions. At a congress of "emulation fighters" in the communication and transport field, for example, both President Ho Chi Minh and Defense Minister Giap pointed out that the air raids had not been able to achieve their objectives because construction units had gone into action quickly in the most critical sectors using the watchword "the enemy bombs the communications lines, we repair them quickly and send traffic through." Similar statements of achievement have been reflected throughout

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NVN propaganda to generate popular confidence and pride in the ability to defeat the "US aggressor."

12. One of the latest examples of the regime's determination to prosecute the war in the face of the bombings came in an editorial in the current issue of the party theoretical journal, Học Tập. The editorial took the occasion of the first anniversary of the promulgation of the NVN four-point proposal on negotiations to make evident that in the intervening year the NVN's adamant position on settling the war had not budged. The editorial recalled that in the past year the US had been repeatedly bombing North Vietnam to no avail, and claimed that in return the North Vietnamese people had caused the loss of "nearly 1,000 US jet aircraft," a continued exaggeration of US losses.

Effects on the NVN Economy

13. The estimated damage, in dollar terms, to economic and military facilities in North Vietnam continues to accumulate at a slow rate. There has been only a limited number of strikes against fixed targets--principally military targets--and the major effort has been against LOC and traffic targets that have relatively low value. The measurable economic loss to North Vietnam resulting directly or indirectly from the bombing of economic and military facilities totals about \$69 million. The cost of replacing damage and destroyed economic facilities and equipment now stands at \$30.6 million. The cost of replacing damaged and destroyed military facilities and equipment is \$27 million. In addition, measurable indirect losses to the economy amount to \$11.4 million, consisting of losses in foreign exchange earnings of \$7.9 million resulting from reduced exports of apatite and cement, and losses in the 1965 fall rice crop of \$3.5 million.

14. Although the cost of replacing damaged and destroyed economic and military facilities and equipment is not an insignificant loss when compared with total North Vietnamese investment in 1964, which amounted to about \$200 million, it is a very small share of the country's total fixed

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assets. This loss is also overshadowed by the value of economic and military aid given to North Vietnam in 1965 by other Communist countries. Direct losses caused by confirmed bomb damage to economic and military facilities and equipment measured in terms of estimated reconstruction or replacement costs are as follows:

<u>Economic Facilities and Equipment</u>		<u>Military Facilities and Equipment</u>	
<u>Targets</u>	<u>Cost (Million Dollars)</u>	<u>Targets</u>	<u>Cost (Million Dollars)</u>
Railroad/High Bridges*		Barracks	16.0
Reconstruction	10.6	Ammunition Storage	4.5
Temporary Repairs	2.6**	Supply Depots	3.0
Transportation Equipment	7.0	Radar and Communications	1.1
Railroad Yards and Ports	.7	Naval Bases	.8
Electric Power Plants	7.8	SAM Sites	.6
Petroleum Storage		Airfields	.4
Facilities	.7	Miscellaneous Targets of	
Manufacturing Facilities	<u>1.2</u>	Armed Reconnaissance	<u>.6</u>
Total	30.6		27.0

15. The NVN leadership continues to give evidence of its intention to maintain as a matter of priority the important lines of communication and to provide for the supply and distribution of a minimum of food and other essentials. The determination of the regime to continue its support of the war in South Vietnam is reflected in recent statements indicating a willingness to eliminate when necessary those goods and services not needed for the support of the war. More than 200,000 workers have been shifted into transportation activities and repair and reconstruction programs. Expenditures to date for temporary repairs to bridges are estimated at \$1.8 million. The transport system apparently is able to maintain essential services and to adapt to the bombing even though the bombed bridges have not been restored to pre-attack condition, and no efforts have been made to undertake even temporary repairs to a large number of bridges.

* The estimate of damage in this category is incomplete because of inadequate poststrike photography.

** Includes \$1.8 million expended to date on temporary repairs and \$0.8 million required to provide temporary repairs for structures damaged but not yet repaired.

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16. The economic impact of the bombing has been limited by the restriction of bombing to targets of relatively minor economic significance, the predominance of a self-sufficient subsistence sector, and the receipt of aid from Communist countries. A recent North Vietnam periodical even claimed that industry developed more than ever in 1965 despite the destruction and disorganization caused by air attacks. Nevertheless, a decline in living standards has been noted. During March a member of the presidium of the central committee admitted that the livelihood of the people in the cities has been affected. Moreover, localized shortages of food and other commodities continue to be observed in rural areas in the southern part of the country and contribute to poor morale and discipline at work sites and among some military personnel. Reallocations within the labor force and the dispersion of some plants and equipment have been undertaken in response to the bombing. There is no way of quantifying the economic cost of these activities, but they must be considerable. Moreover, these costs have increased because of inept management. The domestic supply of skilled labor has been exhausted and the leadership is frequently faced with localized shortages of unskilled labor.

17. Apart from the attack on the port of Ben Thuy in March, the only other recent attacks on targets of potential importance were those on the Ben Thuy thermal electric power plant and several targets in the Vinh area. These restrikes did not add significantly to the damage already sustained by the facilities in these areas. The regime had made little progress, if any, in restoring the damage done by previous strikes.

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